3. E-PROCUREMENT PERFORMANCE INDICATORS -A STEP TOWARDS EU

Aleksandra Bradic-Martinovic
Institute of Economic Sciences (Serbia)

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Aleksandra Bradić-Martinović[1]
Institute of Economic Sciences, Belgrade, Serbia

Abstract

The implementation of information and communication technology (ICT) provides support to a large number of processes within government activities. Most countries have e-government solutions, at least for the basic functions, but developed countries rely heavily on modern technology. Public procurement is very sensitive area for each government, mainly because of its impact on economy (impact on public spending through costs of goods and services for public sector, impact on development of SME sector, impact on employment through SMEs and public work, impact on the entire society through suppression of corruption, etc.). For that reason European countries started to improve the whole process of public procurement and all candidate countries have to fulfil requests.

The subject of this paper is implementation of ICT in the area of public procurement and the technics of measuring the development of this process. During the last four years EU developed indicators for measuring the progress in public e-Procurement. These indicators are divided into two groups and are connected with the certain policy goals. The first group, EU Top level Take-up indicators are connected with the policy goals of full transition to e-Procurement, full participation of SMES and enablement of crossborder transactions and the second group, EU Top level Performance indicators are connected with the need for improvement of effectiveness and efficiency of public spending, and easiness of access and improvement of transparency of public procurement system. These indicators can be calculated based on data from electronic portals for public procurement and EUROSTAT data.

[1] Aleksandra Bradić-Martinović, PhD, Institute of Economic Sciences Belgrade, Serbia, abmartinovic@ien.bg.ac.rs.

Republic of Serbia also have e-Portal for public procurement, but bidders use only few basic functions of it (e-Notification with full documentation and e-Ask), as a consequence of low digital literacy. As a result of that, technically we can calculate these indicators, but practically it is impossible because lack of data.

Key words: *public procurement, EU, integration, indicators, e-procurement*

JEL Classification: *E21, E61, H57*

INTRODUCTION

One of the primary role of government is effective and efficient financial management. This becomes even more pronounced in the years of crisis and recession, in periods of reduced revenues and higher unemployment. In such circumstances, public procurement is very sensitive process. The governments try to find the best way to make public procurement process impartial, efficient, fair and transparent. The most widely used solution is IT based public procurement or electronic procurement (public e-Procurement). Unfortunately, references and scientific studies in this area stared to appear in last decade (Gardenal, 2010, p.3) and there is a wide area for research and for that reason we put public e-Procurement indicators in wider scope.

In first part of the paper we present the public procurement as multidimensional process, list some impacts on economy and present its significance in relation with GDP. Also we emphasize the role of information and communication technologies as a support for public e-Procurement. At the same part we show how public procurement has been changed according to the technological progress. Also, we list all advantages and challenges in this area. Finally, we explain each phase in the process of public e-Procurement.

The second part of paper we show how public e-Procurement has been developed in EU. The main topic within this part is indicators of public e-procurement. We explain, in details, the EU Top level Take-up indicators and EU Top level Performance indicators.

At last part we present the current situation in Serbia in the area of public e-Procurement and the possibilities to implement listed indicators in Serbian e-Portal for public procurement.

BACKGROUND

Public procurement or government procurement is the process in which government administration defines their purchases, collects bids, award contracts and takes into account the implementation of all steps in accordance with applicable law. Through this process government outsource resources in the form of goods or services on state and local level (government or public utility services administrative authorities, public institutions, schools, hospitals etc.).

Despite the fact that the public procurement process is fundamentally straight forward, it actually can be seen as multidimensional phenomenon. It can be observed as:

a) *Administrative Process*. The complex process composed of several steps: identification of requirement for each institution through planning (procurement planning) and strategy development, preparation and publication of required documentation (paper based or electronically), collect all bids and open it on the public meeting, evaluate all bids, choose one bid and award the contract(s).

b) *Business Process.* The process of public procurement basically has the same characteristics as the purchasing process within private sector. The main goals in both processes are efficiency, effectiveness and competition in order to get value for money.

c) *Policy Tool.* Public procurement can be very successful tool for policy goals implementation. It can be used in order to:

   - Reduce unemployment through public work. Public works are the works on the construction of various projects of public interest, such as roads, canals, works on the construction of dams, bridges and large residential neighborhoods, school and hospital centers, then work on the regulation of river basins and lakes etc. The main reason that motivates the government to organize public works is striving to alleviate or solve the problem of unemployment and recover the economy.

   - Encourage the sector of small and medium enterprises through creating conditions for full involvement in the process of public procurement. SMEs are often excluded from this process as a result of formal conditions they cannot achieved, for example the minimum

size of corporate revenues and this problem can overcome through joint bids.

- Improve effectiveness and efficiency of public spending. The provisions of the public procurement encourage free and fair competition in public procurement markets and therefore increase competition provides public authorities with better value in terms of lower prices and higher quality through more competitive procurement (Mandl et.al, 2008, pp. 16).

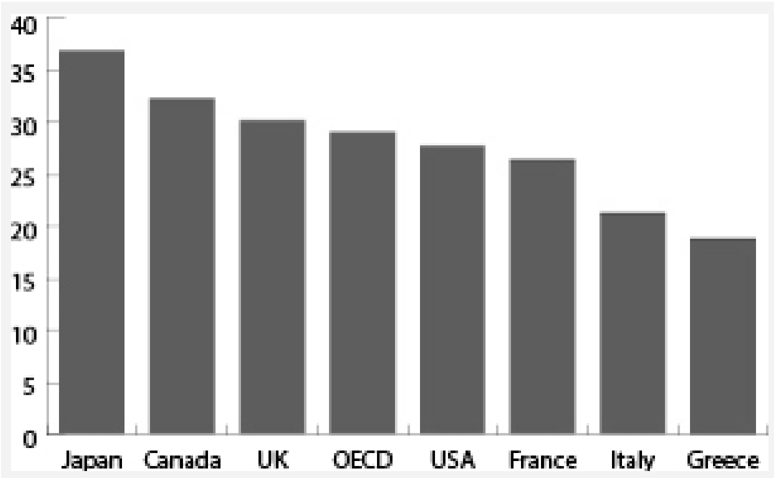
d) *Tool for Higher Transparency and Lower Corruption*. This is a very sensitive issue because corruption in public procurement diverts funds from public sources, resulting in poor quality public works and undermines confidence of citizens and businesses in the state. Even more, the corruption within public procurement is probably the main source of systemic corruption in the country. For that reasons government support the prevention of corruption through better processes and higher transparency.

e) *Driver for Research and Development.* Public procurement can be driver for R&D and innovations. In order to achieve that goal government must define appropriate innovation-promoting process of procurement, sectors which have the highest potential for R&D and to implement the proper public procurement method. Additional to that government needs to create stronger environment in organizational sense and to simplify procedures for public procurement (Vinnova, 2007).

Bearing in mind that the public procurement is the process through which different public entities buy inputs for public sector activities, and consequently they determine the quality of public services and public infrastructure. Public procurement also has an important impact on microeconomic and macroeconomic aspects of the national economy and public finances. Proper public procurement system provides important end results, such as: a) 'better value for money' for the contracting authorities who thus create a climate of greater volume and better quality public services, b) a healthier public finances, which contributes to the quality of public provision of financial services, c) promotion of the preconditions for economic growth through the creation of a competitive public procurement markets and d) improvement of accountability for the use of public funds in particular through the promotion of the ability of contracting authorities for the quality implementation public procurement procedures (Mujevic, 2012, pp. 36-37).

Significance of public procurement can be seen in relation with GDP. In 2011 in OECD countries general public procurement spending represents 29% of total government expenditures. Among these countries the highest values were recorded in Japan (37%) and Canada (32%) while the lowest were recorded in Italy (23%) and Greece (20%). All OECD countries were presented at the Figure 1. The ratio between public procurement and GDP was 13% at average at the same year.

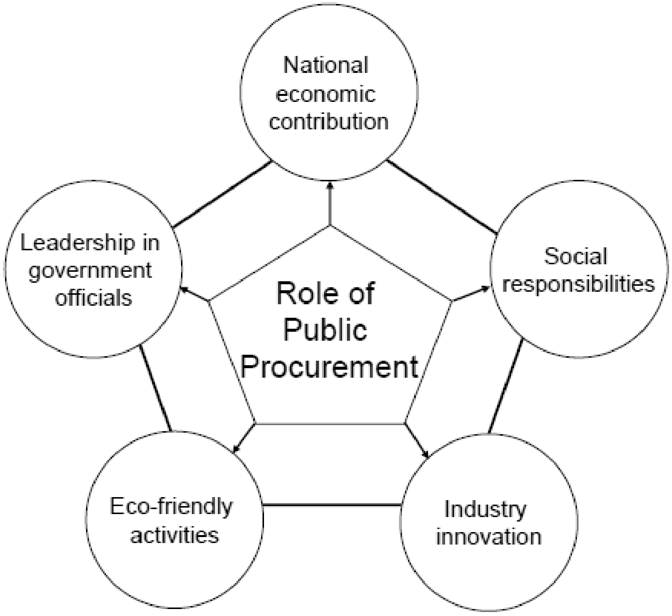
Figure 1: *General government procurement spending relative to total general government expenditures*



Source: http://www.oecd.org/gov/ethics/public-procurement.htm (visited 27 Sep 2015)

The role of public procurement can be classified into five categories, presented in Figure 2.

Figure 2: *The role of public procurement*



Source: Choi, 2010, pp. 1-18

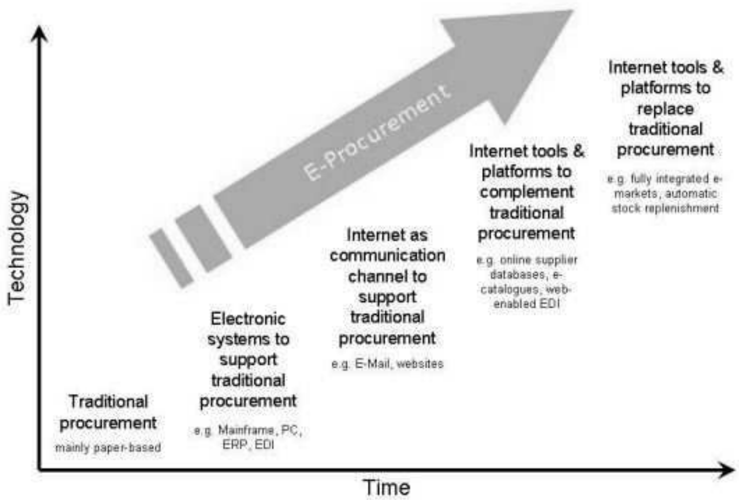
As we already stated, an effective and impartial system of public procurement has a positive impact on the economy, but in cases where the system discriminates against the participants, there is a large number of negative consequences. The most important are endangering the existence and development of small and medium-sized enterprises and deepening social inequalities.

Large improvement in the field of public procurement came with implementation of information and communication technologies (ICTs). The use of ICTs and the digitization leads to the transformation of processes in the country and its economy. In light of the new features, the communication processes have become much easier and faster. Digitalization of communication channels has enabled a significant improvement in efficiency in many areas. Public administration have long recognized many advantages of this progression and initiated the implementation of electronic innovation in their work. Csaki and Adam (2012, pp. 17-40) pointed out that the successful implementation of e-governance implies overcoming the strategic, socio - cultural, organizational / bureaucratic and, of course, technical challenges.

Public e-procurement or e-public procurement include a series of activities which government conducted in order to modernize procurement methods. ICT solutions are introduced in the disclosure process, evaluation of bids, orders, etc. (Hughes, 2005). Practically, they include auctions of goods, services or works electronically supported, using services such as internet and web-based systems by state authorities in order to implement the procurement of goods, works or services. Public e-procurement are practically inter-organizational information system that provides automation of all stages of public procurement, with the aim of improving efficiency, quality and transparency of public procurement in the state administration.

Historically, public e-procurement becomes the point of interest within science society in last twenty years, which is much shorter comparing to the field of ICT implementation in business and private sector. At the 60's buyers and suppliers were electronically connected by the Electronic Data Interchange – EDI technology, at the 70's they were relied on Enterprise Resource Planning – ERP technology, and after 80's on Internet, respectively on web based applications, after 90's. Today they have complete conditions for implementation of public e-procurement.

Figure 3: *Progress in the application of technology in public procurement*



Source: UN Procurement Practitioner's Handbook (2006, p. 4-11)

Similar to other processes the e-public procurement can have advantages and challenges, and Rehan (2012, pp. 189-199) points out the both of them. First he divided advantages into three categories - levels:

- Organizational level: costs can be reduced, visibility of spending is able to increase, process can be control much easier, customer service can be improved, it is time saving and there is a reduction in paperwork;
- Economic level: the process can enhance productivity, in order to improve terms of trade the management information systems can be used and the comprehensive financial analysis can be done and
- Other advantages include the implementation of new technology, higher transparency and ability for users to understand the whole process and system.

List of challenges and barriers in the area of public e-procurement include:

- Nonexistence of proper and applicable procurement strategy;
- Low security of transactions within the process of public e-procurement;
- Legal issues;
- Insufficiently business relations with suppliers;
- Lack of trained personnel for public e-procurement platform and
- Insufficient knowledge of information technology within public sector employees.

After we presented all the advantages and challenges that may arise during the implementation of public e-procurement at the next section we will present the process of public e-procurement in details.

Process of public procurement

The successful implementation of public e-procurement involves a series of phases and steps that must be implemented from initiating of procurement, to the successful signing contract(s) for the purchase of goods or services. Today, a large number of countries have e-portals for public procurement. It is electronically based system that connects suppliers, at one side and purchasers, at another, and it is basically B2B market place.

Electronic platforms (e-platforms) tend to cover each individual phase of procurement process (Bobar, 2013, pp. 56-61):

- *Electronic notification* (e-notification) is the stage where bidders can access and obtain information on all public procurements, regardless of whether it happens in the past, or present or will be relevant in the future. In addition to reviewing the register of public procurements (online data analysis) this service usually provides the possibility to download data to local storage media (offline data analysis).
- *Electronic tendering* (e-ask) implies, in most cases, electronic platform through which providers can access tender documentation. As in the previous case, in addition to online access, platforms usually enabled data storage to local storage media.
- *Electronic access, sending and receipt of tenders* (e-access, e-sending, e-bid) is a very sensitive phase and requires sophisticated software solution. At this stage, the system receives and manages the offers from suppliers. Advanced solutions allow bidders to send tender documentation directly through the electronic portal, which enables the authenticity of the offer to be confirmed by electronic signature. Also it provides direct interaction between the purchasers and the suppliers, which is important in case of doubt or the need for additional documentation.
- *Electronic offers evaluation* (e-evaluation) is the phase that involves evaluation, ranking and proposal offers which, at the greatest extent, meets the criteria set in the specific tender. Advanced systems allow the use of multi-criteria decision making methods, which provide a solution in the form of selecting the optimal offer. This way it meets one of the main criteria for public procurement - impartial decision on the award of contracts.
- *Electronic contract award* (a-contracting) starts after selecting a specific bidder and includes the signing of the public procurement. The most advanced solutions enable electronic signing of the contract, thus achieving great savings through increased efficiency contracting.
- *Electronic orders* (e-ordering) is the stage where the contracting authority has an option of choosing products or services by examining the electronic catalog bidder.
- *Electronic invoicing and payment* (e-payment) is the final phase, which occurs when they completed all of the above stages. If there is a

possibility of electronic connectivity entire process can be automated (payment and e-invoice).

The listed phases are universal and do not depend on technology that monitors the entire process. Technological development changed the implemented solutions but the essence of the process remains the same. For example, the first development phase in in Figure 2 shows that public procurement can be organized in paper form, which is unacceptable today. However, countries have not yet reached a point of progress where they can apply the electronic system for each and every phase of the process. Mostly, they managed to secure the electronic publication process.

PUBLIC E-PROCUREMENT IN EU

The system of public procurement has a crucial role in the strategic development of the EU according to the "Europe 2020 - A strategy for smart, sustainable and comprehensive growth" document and it can be seen as a key driver of European Digital Single Market. For that reason EU has made a number of steps to improve this process, with aim to increase the *flexibility of the contracting process and improve access to public tenders for SMEs, as well as the possibility of large savings on a global level*.

Kannan (2014) argues that the adoption of e-procurement in EU enterprises are relatively low. Although the few challenges are common (high uncertainty avoidance, cross national differences, technical complexity, e-signatures for cross border transactions and lack of awareness) the reasons for this is different and varies between SMEs and large enterprises.

The reasons for low level of adoption among SMEs are: fear of high costs for basic e-procurement infrastructure, deficiency of professionals who can functionally work with the system, problems with fast changes and updates, concerns for time consuming process for development of customized electronic solutions and high costs (money and time) for trainings of employees.

The large enterprises have different challenges before and after the adoption of e-procurement system. Before adoption they are facing with resistance to adoption and issues regarding budget approvals, while after the adoption they have

challenges with business process reengineering, suppliers which are not ready to adopt e-system, lack of confidence and time consuming process of development.

The European Commission estimates that the public institutions involved in e-procurement have 5-20% savings on annual basis in relation to costs in the period before inclusion (EC, 2005, p. 2). Therefore, Directive on Public Procurement (2014/24 /EU) requires, by the end of 2016, that all member states must ensure the implementation of all required procedure, and among them is the implementation of e-procurement. For this reason:

a) Until March 2016 all member states must introduce electronic notification (all information relating to public procurement must be sent electronically) and must implement electronic access to tender documentation;

b) By March 2017 all the Central contracting authorities (those who perform public procurement in the name and on behalf of other contracting authority) will be obliged to electronically submit bids and

c) Up to September 2018 electronic submission of tenders will become mandatory for all participants.

It is important to note that the EU consists of a large number of countries, which complicates international procurement process, so the EC started to establish an online repository of certificates and attests (*e-Certis*) in order to increase the transparency of the participants on the supply side. E-Certis is the information system which can help European companies to response to a foreign call for tenders. It provides help in understanding tender requirements in details or to find partners. Practically, it is a reference tool (EC, DG Internal Market and Services). An integral part of this concept is also the *European Procurement Passport* or *European Single Procurement Document* (ESPD). Participants in procurement will have ESPD which is 'consisting of an updated self-declaration as preliminary evidence in replacement of certificates issued by public authorities or third parties confirming' (ESPD under Reg. 59). Finally, *e-invoicing* has significant impact on the whole process. E-invoicing refers to the ability for sending electronic invoices direct to the customer's bank by the seller and their automatic billing after bank's confirmation, on the basis of instructions from the seller that are already included in the invoice itself (Vuksanović & Bradić-Martinović, 2010, pp. 1629-1638).

EU indicators of electronic public procurement system

EU has several levels of indicators regarding public procurement. First level of indicators is a part of Information society statistics. EUROSTAT offers, under the *Special module 2011: enterprise – e-government (isoc_ci_eg),* data for *Public electronic procurement system (isoc_cieg_pep),* (http://appsso.eurostat.ec.europa.eu/nui/show.do).

According to the enterprise size it is available data for following categories:

a) All enterprises, without financial sector (10 persons employed or more);
b) Small enterprise (10-49 persons employee), without financial sector;
c) Medium enterprises (50-249), without financial sector;
d) SMEs (10-249), without financial sector and
e) Large enterprises (250 persons employed and more) without financial sector.

Within these categories for 2011, 2012 and 2013 EUROSTAT anticipates these indicators:

a) Enterprises uses internet for accessing tender documents and specification in electronic procurement system of public authorities;
b) Enterprises uses internet for accessing tender documents and specification in electronic procurement system of public authorities and for offering goods and services in the system;
c) Enterprises uses internet for offering goods and services in public authorities' electronic procurement systems (eTendering)
d) Enterprises uses internet for offering goods and services in public authorities' electronic procurement systems (eTendering), in own country and
e) Enterprises uses internet for offering goods and services in public authorities' electronic procurement systems (eTendering), in other EU countries.

The values of previous indicators are available in EUROSTAT portal.

EU performance indicators of public procurement

Proper monitoring of effectiveness and efficiency of EU e-procurement portals required a system of appropriate indicators. On November 2011 IDC and Pwc EU services won the contract for development of methodology on e-procurement measurement and benchmarking. From January 2012 to June 2013 IDC maps all Member States and created a set of indicators that could be derive from e-procurement platforms. There are two main groups of indicators, EU Top level Take-up indicators and EU Top level Performance indicators. On the second phase of the project Pwc published results of the research in a form of Final report – e-Procurement Golden Book of Good Practice (Pwc, 2013).

The EU Top level Take-up indicators are connected with the policy goals of full transition to e-Procurement, full participation of SMES and enablement of crossborder transactions, as presented in the Table 1.

Table 1: *EU Top level Take-up indicators*

Policy Goals	EU Top level Take-up indicators
Full transition to e-Procurement	E-procurement take-up in value E-procurement take-up in volume
Full participation of SMEs to e-procurement	E-procurement take-up by SMEs in value E-procurement take-up by SMEs in volume
Enablement of crossborder e-procurement	E-procurement take-up by cross-border suppliers in value E-procurement take-up by cross-border suppliers in volume

Source: IDC, 2012, p. 7.

Progress in expanding of e-procurement and inclusion of enterprises can be measured by means of the following indicators. The first one measures transition expressed in the value of the contracts and the second use the volume i.e. the number of the contracts.

$$\text{Full transition to e-procurement in value} = \frac{\text{Total value of contracts processed with e-submition}}{\text{Total value of all processed contracts}}$$

$$\text{Full transition to e-procurement in volume} = \frac{\text{Total number of contracts processed with e-submition}}{\text{Total value of all processed contracts}}$$

ll and medium enterprises represent 99% of all enterprises in EU. In the past five years, they have created around 85% of new jobs and EC considers SMEs and entrepreneurship as key to ensuring economic growth, innovation, job creation, and social integration in the EU. (EU, http://ec.europa.eu/growth/smes/). For that reason EC invests considerable effort to involve SMEs in public procurement process and their transition to the electronic platform. The next indicator measures the level of participation of SME in e-procurement.

$$\text{Full participation of SMEs to e-proc. (value)} = \frac{\text{Total value of contracts processed with e-submition and won by SMEs}}{\text{Total value of all processed contracts}}$$

$$\text{Full participation of SMEs to e-proc. (volume)} = \frac{\text{Total number of contracts processed with e-submition and won by SMEs}}{\text{Total value of all processed contracts}}$$

Cross-border transactions are very important issue in EU. From the very beginning EU relies on the possibility for people, goods, services and capital to move free. It opens up new opportunities for citizens, workers, businesses and consumers, and as a result of that Member States have possibility to create the jobs and to stimulate growth. In correlation with that subject, in the set of Take-up indicators, IDC created indicator for measure value and volume of cross-border e-procurement.

$$\text{Enablement of cross-border e-proc. (value)} = \frac{\text{Total value of contracts processed with e-submition and won by cross-border suppliers}}{\text{Total value of all processed contracts}}$$

$$\text{Enablement of cross-border e-proc. (volume)} = \frac{\text{Total number of contracts processed with e-submition and won by cross-border suppliers}}{\text{Total number of all processed contracts}}$$

Besides the main indicators IDC created two more indicator, in order to provide better insight in the structure of the purchase connected with the full transition to e-procurement policy goal.

$$\text{Take-up of e-proc. by type of purch. (value)} = \text{Breakdown of total value of contracts processed with e-submission in the EU by type of purchase}$$

$$\text{Take-up of e-proc. by type of purch. (volume)} = \text{Breakdown of total number of contracts processed with e-submission in the EU by type of purchase}$$

The second set of indicators, **the EU Top level Performance indicators** are connected with the need for improvement of effectiveness and efficiency of public spending, and easiness of access and improvement of transparency of public procurement system, presented in Table 2. These indicators are designed for appropriate benchmarks in order to measure performance of e-procurement.

Table 2: *EU Top level Performance indicators*

Policy Goals	**EU Top level Performance indicators**
Improve Effectiveness of public spending	E-Submission Price Reduction Indicator E-Submission Reduction of Litigation indicator
Improve efficiency of procurement processes	E-Tendering Efficiency Improvement indicator for Contracting Authorities E-Tendering Efficiency Improvement indicator for Suppliers
Improve ease of access of public procurement	E-Submission Ease of access indicator
Transparency of public procurement process	E-procurement transparency indicator

Source: IDC, 2012, p. 7.

First sub-group of indicators is connected with price reduction[2] within e-submission and correlated with the improvement of effectiveness of public spending policy goal, because these reductions can accumulate considerable savings. Also the reduction of litigations is very important, because they are time and money consuming processes, and it is monitoring by the e-submission reduction of litigation indicator.

$$\text{E-submission price reduction} = \frac{\text{Average price reduction of e-submission contracts}}{\text{Traditional procurement contracts}}$$

[2] The average price reduction indicator measures the difference between the reserve price (the maximum payment allowed for the contract) and the award price of a contract, on average for all the contracts processed with e-submission by the sample of platforms (IDC, 2012).

$$\text{E-submission reduction of litigation} = \frac{\text{Average frequency of litigation for e-submisson contracts}}{\text{Average number of appeals}}$$

The second sub-group indicators has been based on the need for improvement efficiency of procurement process policy goal. IDC developed two indicators regarding this goal: E-Tendering Efficiency Improvement indicator for Contracting Authorities (CA) and E-Tendering Efficiency Improvement indicator for Suppliers.

$$\text{E-tend. efficiency improvement (CA)} = \frac{\text{Average time saved by CAs in implementing e-tendering}}{\text{Traditional procurement pre-award process}}$$

$$\text{E-tend. efficiency improvement (suppliers)} = \frac{\text{Average time saved by supp. in implementing e-tendering}}{\text{Traditional procurement pre-award process}}$$

The third indicator have in focus improvement of easiness of access in public procurement process policy goal.

$$\text{E-submission ease of access} = \text{High/Medium/Low ease to e-submission measured through the type of authentication requirement (from simplified eID to advanced e-signatures}$$

The last indicator follows the policy goal for improvement transparency of public procurement process which is very important because prevention of corruption.

$$\text{E-procurement transparency} = \text{High/Medium/Low transparency indicator measured through the quality and completeness of information}$$

The previous indicators can be calculated only if public procurement system in each Member State can provide the appropriate data. Annex I contains the list of minimum data for two sets of indicators. It is also important to point out that because of data collection issues IDC anticipated two positions regarding indicators: “ideal” position - indicators are based on the total market and “sample” position – indicators are based only on sample data (ICD, 2012).

Having in mind that European Commission introduced the mandatory of full public e-procurement for all Member States in period 2016-18, it is very important to be aware of all challenges within the process of implementation, especially regarding these indicators. The main challenges are: a) problem with data collection process because some platforms do not collect all necessary data

or have different definition, b) some Member States do not have proper reports, monitoring activities or expert studies, c) problem with the representativeness of the sample and d) lack of objective parameters for evaluation.

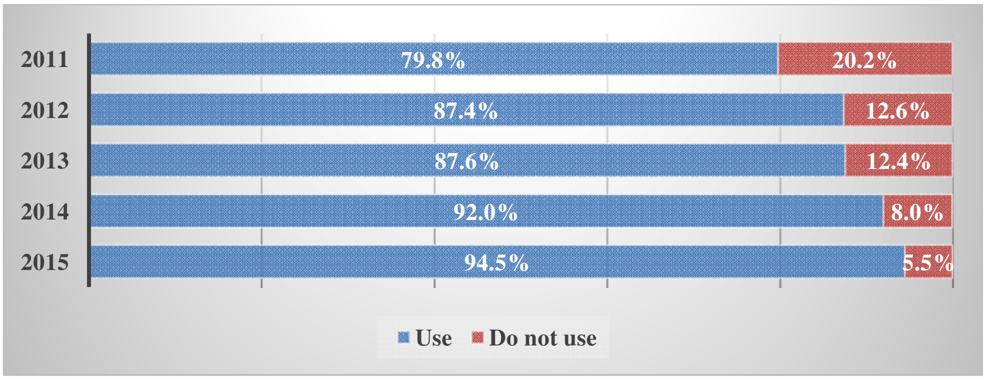
After we presented the concept of e-procurement indicators and pointed out some issues in their implementation at the next section we will focus at the public procurement system in Serbia and explore the possibilities for introduction the indicators.

E-PUBLIC PROCUREMENT IN SERBIA

During the last decade Republic of Serbia made great effort in order to improve the system of public procurement, having in mind that this is one of the necessary conditions upon EU accession (Chapter 5). Serbia has improved its legislation with the Law of public procurement (2012), according to which the budget beneficiaries, legal entities engaged activities in the public interest and public companies are required to implement the procedures of public procurement. The latest amendments to the new law came into force in August 2014. The key issues of the old Law were: complicated procedure, long duration of the public procurement procedure, too extensive documentation, perceptions of widespread corruption in public procurements, misuse of protecting the rights and long duration of protection rights process. Furthermore, Serbia has adopted the Strategy for Development of Public Procurement System for the period 2014-2018. According to the Strategy, the development and modernization of e-procurement in Serbia is planned to be implemented from the beginning of 2016 to the end of 2017, mainly through the e-Portal (Bradić-Martinović, 2015, p. 240).

According to statistical data, in Republic of Serbia 94.5% of companies use e-government services, as presented in Figure 4. In particular, enterprises use e-government services for: obtaining information (93.5%), obtaining forms (91.7%) and sending forms as reply (88.2%).

Figure 4: *Usage of e-government services in Serbia (2011-2015)*

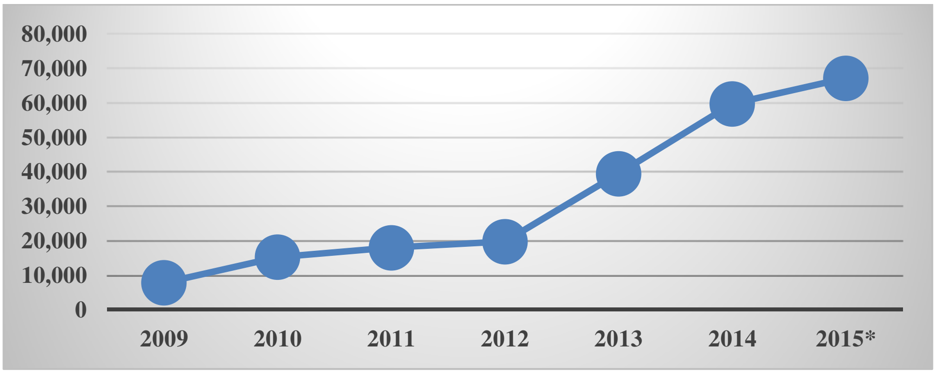


Source: Statistical Office of Serbia, 2015, p. 82.

Based on previous data we can conclude that the capacity and potentials for successful implementation of e-procurement in Serbia existing.

The key point of progress in electronic public procurement in Serbia was introduction of e-Portal in 2008. It becomes fully operational in 2009 and turn into unique tool for improving transparency and the information quality for participants in the process.

Figure 5: *Number of public purchases published on e-Portal*



* Data for 2015 is projection based on 2014.

Source: Serbian Public Procurement Office, Report for 2014, p. 16

As a general indicator for the state in this area we can use the number of public procurement published on Serbian e-Portal, from 2009 to 2015. During that period, number of purchases grew at rate over 40%.

The previous trend is not unexpected because according to the Law all procurement must be published through e-Portal, with comprehensive documentation. Also, complete correspondence with bidders must be transparent on the e-Portal (Q&A).

E-Portal, at this stage of development, provides only two steps of the procurement process e-notification and e-ask. In compliance with Law, e-Portal provides e-submission, because Serbian law on electronic business recognized electronic signatures and electronic document as regular categories. In practice, however, it is not functionally.

Technically speaking, all indicators listed in the previous section and presented in Anex I can be calculated based on the data provided by e-Portal, but the portal is not fully functional.

The main problem in development of e-Procurement in Serbia is low level of digital literacy in the society and, as a result of that, strong resistance toward electronic business. Serbian government try to balance between the need for transparent and easy access process of public procurement and need for modernization through introduction of e-solutions.

CONCLUSION

The development of modern public procurement system requires lot of time and effort. In this paper we show that implementation of ICT solutions can be solid ground for it. EU made a huge progress in this area and according to their strategies in the last part of 2017 we can expect fully implementation of public e-procurement process within Member States. As a measure of progress, they developed set of indicators for public e-Procurement.

During the last ten years Serbia made major progress in regulation of public procurement. It adopted new Law and Strategy and made e-Portal as obligatory step in the process of public e-procurement. The main issue in this process is gap between technical solutions and ability of business sector, especially SMEs, to use

it. We found that e-Portal in Serbia has ability to provide all necessary data for calculation all listed indicators, but it is not fully functional by now. The main reason for that is low level of public digital literacy and great resistance toward it. Having in mind that Serbia shows its determination toward integration in the EU meeting the conditions within this area is also very important.

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ANNEX I

Basic Indicator By Platform – related to the reference measurement period (1 year)	Source
Total Number of Contracts awarded by platform	Platforms
Total Number of Contracts awarded by platform with e-Submission	Platforms
Total Value of Contracts awarded by platform	Platforms
Total Value of Contracts awarded by platform with e-Submission	Platforms
Total Number of Contracts awarded to SMEs by platform	Platforms
Total Number of Contracts awarded with e-Submission to SMEs by platform	Platforms
Total Value of Contracts awarded to SMEs by platform	Platforms
Total Value of Contracts awarded with e-Submission to SMEs by platform	Platforms
Total Number of Contracts awarded to cross-border suppliers by platform	Platforms
Total Number of Contracts awarded with e-Submission to crossborder suppliers by platform	Platforms
Total Value of Contracts awarded to cross-border suppliers by platform	Platforms
Total Value of Contracts awarded with e-Submission to crossborder suppliers by platform	Platforms
Total number of contracts awarded by type of purchase (supplies, services, public works)	Platforms
Total value of contracts awarded by type of purchase (supplies, services, public works)	Platforms
Total number of contracts awarded with e-submission by type of purchase (supplies, services, public works)	Platforms
Total value of contracts awarded with e-submission by type of purchase (supplies, services, public works) Platforms	Platforms

Additional Data collection needs for Take-up indicators – Data needed from MS or Eurostat

Basic Indicator By Platform – related to the reference measurement period (1 year)	Source
Total number of public procurement contracts awarded - by MS and at EU level	MS and/or Eurostat
Total value of public procurement contracts awarded - by MS and at EU level	MS and/or Eurostat
Total number of public procurement contracts awarded to SMEs - by MS and at EU level	MS and/or Eurostat
Total value of public procurement contracts awarded to SMEs - by MS and at EU level	MS and/or Eurostat
Total number of public procurement contracts awarded to cross-border suppliers - by MS and at EU level	MS and/or Eurostat
Total value of public procurement contracts awarded to cross-border suppliers - by MS and at EU level	MS and/or Eurostat
Total number of public procurement contracts awarded by type of purchase (supplies, services, public works) - by MS and at EU level	MS and/or Eurostat
Total value of public procurement contracts awarded by type of purchase (supplies, services, public works – by MS and at EU level	MS and/or Eurostat